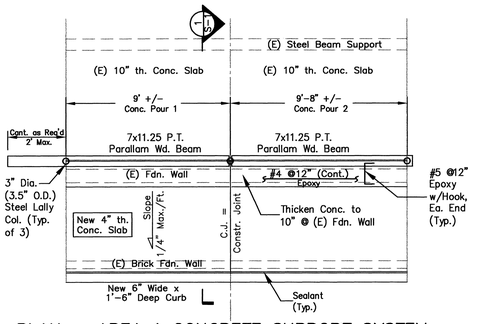
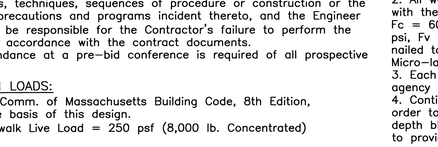


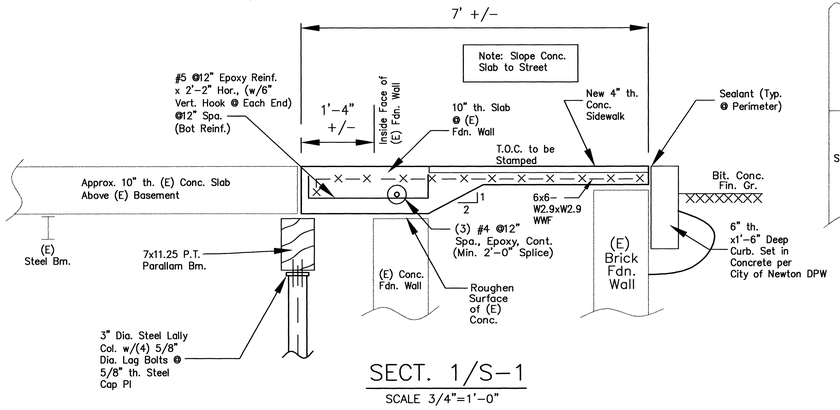
PLAN – AREA 1 CONCRETE SUPPORT SYSTEM CEILING PLAN

Scale: 1/4" = 1'-0"



PLAN – AREA 1 CONCRETE SUPPORT SYSTEM FOUNDATION PLAN

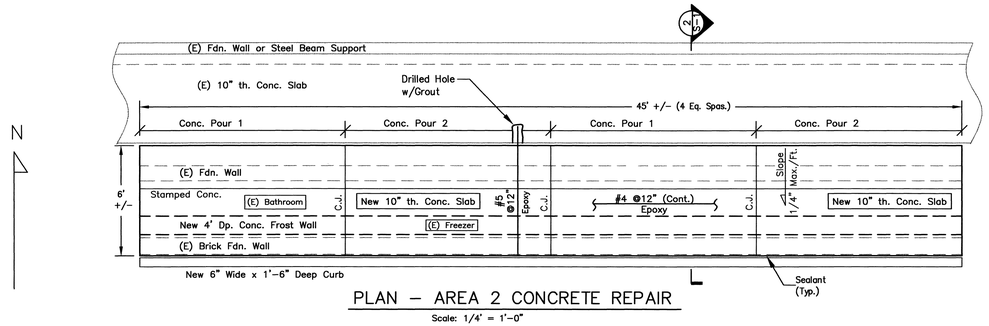
Scale: 1/4" = 1'-0"



SECT. 1/S-1

SCALE 3/4"=1'-0"

Note: Thicken Conc. Slab Locally @ any Settled Soil Locations.



PLAN – AREA 2 CONCRETE REPAIR

Scale: 1/4" = 1'-0"

Note: Contractor is to provide a waterproofing procedure subject to approval by the City of Newton (especially protection of all structures and businesses located within and/or below the indicated work zones).

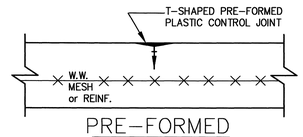
Contractor is to deign and provide all required temporary shoring.

Contractor is to limit removal of existing concrete slab to a maximum of 4' wide sections. Provide temporary shoring and additional temporary support from the existing concrete foundation wall, as required.

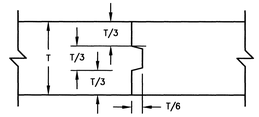
Note: Attendance at a pre-bid conference is required of all prospective bidders.

Note: Contractor is to field verify all dimensions prior to any fabrication or Commencement of Work.

Note: Contractor is to take all necessary measures to insure watertightness throughout the work zone.



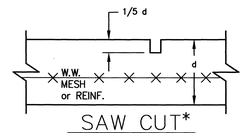
PRE-FORMED



WELDED WIRE FABRIC OR REINF. SHALL BE CONTINUOUS THROUGH ALL CONSTRUCTION JOINTS (UNLESS OTHERWISE NOTED).

CONSTRUCTION JOINT DET. @ FDN. WALL

N.T.S.

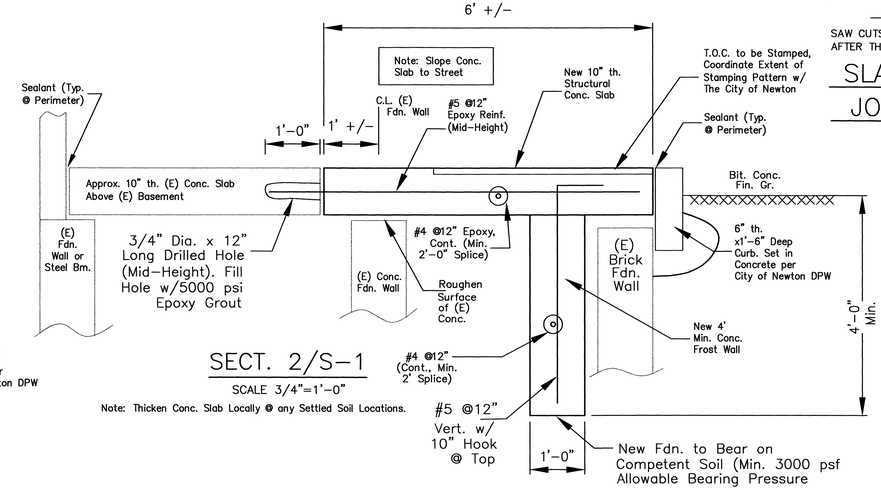


SAW CUT*

SAW CUTS SHALL BE MADE 24 HOURS AFTER THE INITIAL SET OF CONCRETE

SLAB CONTROL JOINT DETAILS

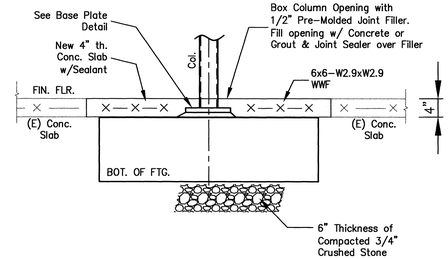
N.T.S.



SECT. 2/S-1

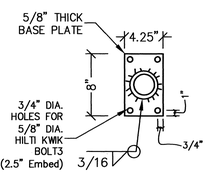
SCALE 3/4"=1'-0"

Note: Thicken Conc. Slab Locally @ any Settled Soil Locations.



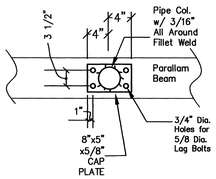
SECTION 3

SCALE 3/4"=1'-0"



PIPE COLUMN (3.5" O.D.) BASE PL DETAIL

N.T.S.



(3.5" O.D.) COL. CAP PL DET. @ WOOD BEAM

N.T.S.

NOTES:

GENERAL:

1. Refer to Architectural and other discipline drawings for locations and dimensions of chases, inserts, openings, sleeves, depressions and requirements for attachment of finishes.
2. All dimensions shall be field coordinated by the Contractor, any inconsistencies shall be reported to the Engineer before proceeding with the work.
3. The Contractor shall verify all dimensions and elevations in the field. Notify the Engineer, in writing, of any field condition uncovered during construction that is not consistent with the plans.
4. Unless otherwise noted, details shown on drawing are to be considered typical for all similar conditions.
5. Unless otherwise noted, all footings and sonotubes shall be centered under supported members.
6. Whenever sleeves are inserted in concrete slabs, beams or walls, they shall consist of steel, cast iron pipe or PVC pipe.
7. The Engineer will not be responsible for Contractor's means, methods, techniques, sequences of procedure or construction or the safety precautions and programs incident thereto, and the Engineer will not be responsible for the Contractor's failure to perform the work in accordance with the contract documents.
8. Attendance at a pre-bid conference is required of all prospective bidders.

DESIGN LOADS:

1. The Comm. of Massachusetts Building Code, 8th Edition, was the basis of this design.
2. Sidewalk Live Load = 250 psf (8,000 lb. Concentrated)

DEMOLITION, SHORING AND UNDERPINNING WORK:

1. The Contractor shall remove and relocate, as required utilities crossing excavations and new foundation work. The Contractor shall provide temporary support for all utility lines adjacent to the foundation work. Where utilities cannot be relocated, notify the Engineer before proceeding.
2. Protect streets, sidewalks and existing foundations during excavations by sheet piling, bracing, shoring, etc., as required by field conditions. Excavation and shoring shall be inspected by a competent registered engineer employed by the Contractor. Protection against slides and cave-ins shall be increased if he deems it necessary.

WOOD FRAMING:

1. All wood constuction shall conform to the requirements of the National Design Specification for Wood Construction by the National Forest Products Association and local building codes and Comm. of Mass. Building Code, 8th Edition, including all connections.
2. All wood members shall be Spruce Pine Fir # 2, as a minimum, with the following minimum properties: Fb = 875 psi, Fv = 85 psi, Fc = 600 psi and E = 1,400,000 psi. LVL members: Fb = 2850 psi, Fv = 285 psi, E = 2,000,000 psi. Multiple members shall be nailed together with a minimum of three 16d nails per foot. Micro-lam is an acceptable substitute for LVL.
3. Each piece of lumber shall bear a grade stamp from the grading agency responsible for the species.
4. Continuity in framing shall be provided at all bearing points in order to transfer the loads to the foundation or other framing. Full depth blocking shall be used in the floor framing under woods posts. to provide full bearing through framing.
5. Do not notch the top or bottom of joists in the middle third of the span. End notches shall not exceed 1/6 of the joist depth.
6. Headers, if not specified on the drawing, shall be (2) 2x12 min.. Posts below headers shall be (2) 2x6's, if not specified on the drawing Posts below LVL beams shall be (3) 2x6's, if not specified on the drawings.
7. Copper based (w/o copper chromate arsenate) preservative pressure treat all exterior wood exposed to moisture (u.n.o.), after fabrication including blocking and handrail pieces. Each piece shall be stamped and rated for ground contact.
8. Provide solid blocking @ 1/2 span for all floor joist spans greater than 8 feet.

EXCAVATIONS, FOUNDATIONS AND BACKFILL:

1. Excavations shall be performed under the supervision of a geotechnical engineer. The geotechnical engineer shall confirm that the base material is adequate to sustain the design bearing pressure, before any foundations are cast. Excavations shall extend in depth necessary to reach the specified bearing layer.
2. Foundations shall be carried down through soft or organic soils and other unsuitable fill and bear on undisturbed natural soil or compacted structural fill capable of supporting a superimposed load of 3000 psf. The capacity of the soil to support the above loading in addition to the loading imposed by any new fill shall be verified by a geotechnical engineer prior to casting concrete.
3. Extend exterior foundations (including sonotubes) to a frost depth of 4 feet below finished grade, minimum.
4. Extend and slope sides or shore, sheet and brace excavations as required to ensure stability and safety at all times.
5. Where necessary, pump the evcavation to remove surface and groundwater, to permit finishing of the excavation and placing of foundations in the dry. No footing shall be placed in water.
6. Material adjacent to and below the footings shall be kept from freezing at all times. If any material is found to be frozen, it shall be removed and replaced with concrete.
7. All structural fill shall be placed in layers not more than 8" in loose depth and compacted to the following percentages of maximum density as determined by ASTM test method D598: 98% beneath footings, 95 % beneath slabs on grade.

STRUCTURAL STEEL:

1. All Structural Steel work shall conform to the American Institute of Steel Construction "Specifications for Design Fabrication and Erection of Structural Steel for Buildings" and to the requirements of local building codes.
2. All Steel to be 50 ksi.
3. Bolts shall conform to ASTM A325 (ASTM A307 at connection to wood members), 3/4" minimum. All bolts shall conform to ASTM A 325, Type 1. Nuts shall be ASTM A325 overtapped, Grade DH.
4. Anchor bolts shall be ASTM A36 rods.
5. All welding and details shall be as recommended by the AISC and conform to the requirements of the American Welding Society. All welds shall develop the full strength of the members to be welded, minimum size of fillet welds shall be 3/16", with a 1/2" return. All welds shall be E70xx, with Fy = 70 ksi.

CONCRETE:

1. All concrete shall conform to the Building Code Requirements for Reinforced Concrete (ACI 318), the Structural Specifications for Structural Concrete in Buildings (ACI 301) and local building codes. All concrete work shall be specified as recommended by ACI Field Reference Manual SP-15. Special Cold Weather (ACI 306) or Hot Weather (ACI 305) concreting practices shall be utilized whenever appropriate.
2. All concrete shall be stone (3/4" aggregate) concrete having a minimum compressive strength of 4000 psi at 28 days, maximum slump at discharge shall be 3".
3. Provide 7% air-entrainment for all concrete.
4. All reinforcement shall be deformed bars conforming to ASTM specification A615, grade 60.
5. All welded wire fabric (WWF) shall be plain, cold drawn, electrically welded fabric conforming to the requirements of ASTM A185. Supply welded wire fabric in flat sheets, lap sheets 1 1/2 mesh.
6. Reinforcing shall be securely tied in it's proper place before and during pouring operations, using approved chairs and spacers, as required.
7. Slabs on grade shall be placed on a 6" thick (min.) layer of 95 % compacted gravel. Provide 6x6-W2.9xW2.9 W.W.F., placed 1" from top of all slabs on grade, U.N.O..
8. All reinforcement shall be continuous across construction joints.
9. The concrete contractor shall install or give other trades ample opportunity to install all appertunances required by these trades Contractor shall verify all dimensions before setting screeds and forms.
10. Provide clearance from faces of concrete to reinforcement as follows: bottom of footings and outside face of fdn. walls: 3", all other concrete 2". Do not cut or displace reinforcing steel to accomodate installation of embedded items, unless approved by the Engineer.
11. All horizontal surfaces intended for foot traffic shall receive a non-slip broom finish.
12. Contractor is to submit concrete mix design to Engineer, for approval, prior to Commencement of Work. Dependant on time of year of concrete placement, provide concrete retarder or accelerator in mix.
13. Contractor is to hire a certified testing agency to perform strength and slump testing of 4000 psi concrete and required 7% air entrainment.

BID QUANTITIES

ITEM	ESTIMATE
Concrete	24 Cubic Yards
Reinf. (Epoxy)	600 (Pounds)
Reinf. (Plain)	400 (Pounds)
W.W.F.	200 Sq. Ft.
P.T. Wood Parallam	24 Feet of 7x11.25 Parallam Bm.
3" Dia. Steel Lally Col. w/Cap & Base Pl	(3 Req'd) Length = 8 Foot Each
Curb	65 Lineal Feet
Epoxy Grout	3/4" Dia. Hole 50 Lineal Feet
Lamp Black	2 lbs./cu. yd. of Slab 30 Pounds

No.	Date	Description
1	10/18/11	General Revision

Revisions

ROBERT H. GRIFFIN CIVIL #36686 COMMONWEALTH OF MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER

10.18.11

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Beverly, MA 01915

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City of Newton
Sidewalk Repair
Union St.
Newton, Ma.

Sidewalk Support System
Plans, Sects.
Dets. & Notes

Scale: As Shown
Job No.:
File Name: p\N\SR
Date: 10/7/11

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